



CATALON

FIBROUS ION-EXCHANGE MATERIAL



GEYSER[®]
water filters

A new dawn for water
treatment.

In 2014 the fibrous ion-
exchange material of new
generation was created at
the Geyser company.



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The patient on CATALON material

Patent claim

«This device belongs to the production of the filter material with strong adsorbing characteristics, vid.the fibrous filter material and its method for the production and application. This material can be used for viruses deactivation during water filtration through its layer/s...»



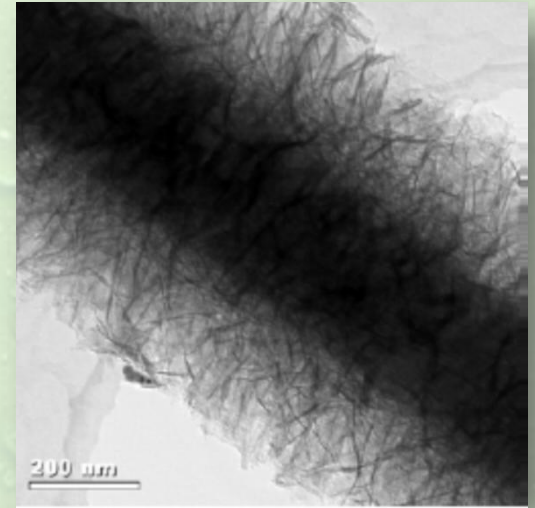


What is CATALON?

Catalon is the fibrous ion-exchange material created at the Geyser company that stands to reason of the unique manufacturing process of filtering materials.

In 2014 the Geyser company leapt forward in synthesizing of fibrous materials with advanced sorption properties that can destroy viral and bacterial envelopes.

The results of investigation are confirmed by the patent for an invention. Also the patent for the material protects the manufacturing process (original chemical substances and the way of their intermixing).



Elektro-adsorbtion



Multiple experiments and tests have confirmed that Catalon has the same viruses removal mechanism as Aragon. The fibrous sorbent surface has high electrokinetic potential and gradient electrostatic field appears around it. This electrostatic field is able to destroy viruses cover even if they are very far from the surface. This viruses removal method is safe for a human and resource-unrestricted. High electrokinetic surface potential was derived by the patented way of chemical substance mixing during the synthetic process. As a result, active groups of heteropolar charges appear on the material surface layer.



CATALON peculiarities

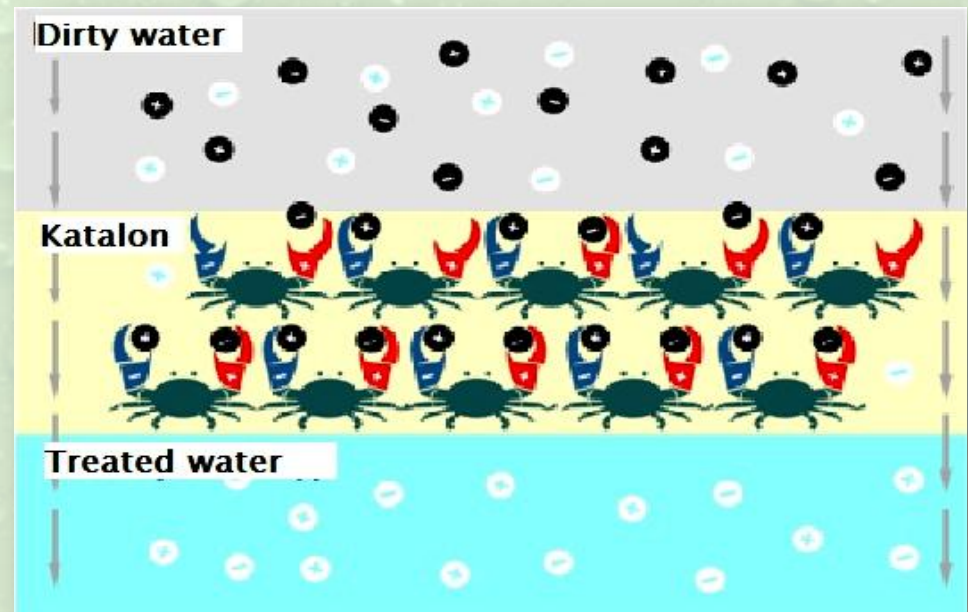
Catalon has not only chelate peculiarities (heavy metals selective decationizing), but amphotitic ones.

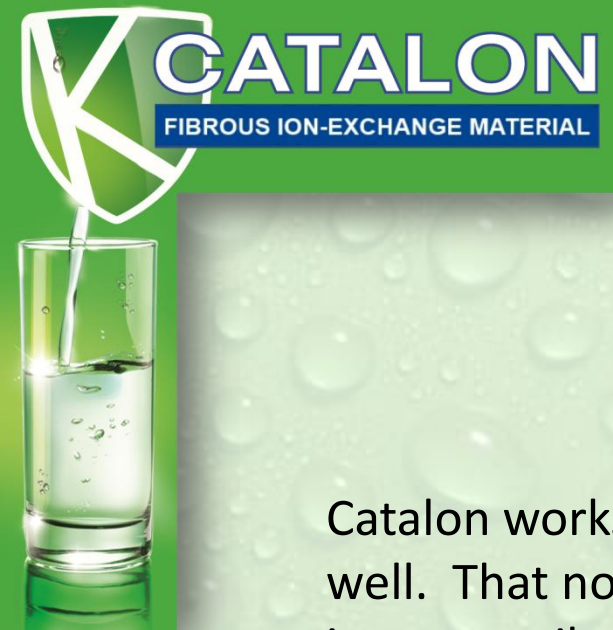
It means that Catalon removes not only cations:

- copper
- cadmium
- lead

but anions:

- organic impurities
- chloroorganics
- iron-depositing bacteria
- colloidal iron





CATALON peculiarities

Catalon works with silver particles well. That not only allows us to integrate silver into the material but also prevents silver outwashing.



Silver is important water clearing element that prevents bacterial growth inside the filtering module.





A new dawn for water treatment by Geyser jug filters

For the first time the constructed jar filter cartridge let us drink water without boiling.

Now the jar filters Geyser with the cartridge Catalon protect you against viruses 100%.



How have we achieved this?

Jug filters cartridge with CATALON

New technology of layer sorbing agent filling applied allows it to evade occurrence of wall and tunnel effects that is of great importance for effective viruses and bacteria removal.

- 1** Filtering layer made of amphoteric fibre Catalon In comparison with other fibrous materials it removes not only hard metals (iron, copper, lead, etc.), but also organic impurities, colloidal iron, viruses. **+Ag**
- 2** Filtering and conditioning layer It consists of high quality coconut charcoal and amberlite resin. It removes chlorine, organic impurities, pesticides and it improves water taste. **+Ag**
- 3** Final protection cover made of modified fiber Catalon Contact time between water and filtering media increases because of this layer structure. Thereby, there are circumstances for regular distribution of flows (wall effect is prevented). Bacteria growth is eliminated, viruses are removed. This layer also provides anti-discharge and self-indication. **+Ag**



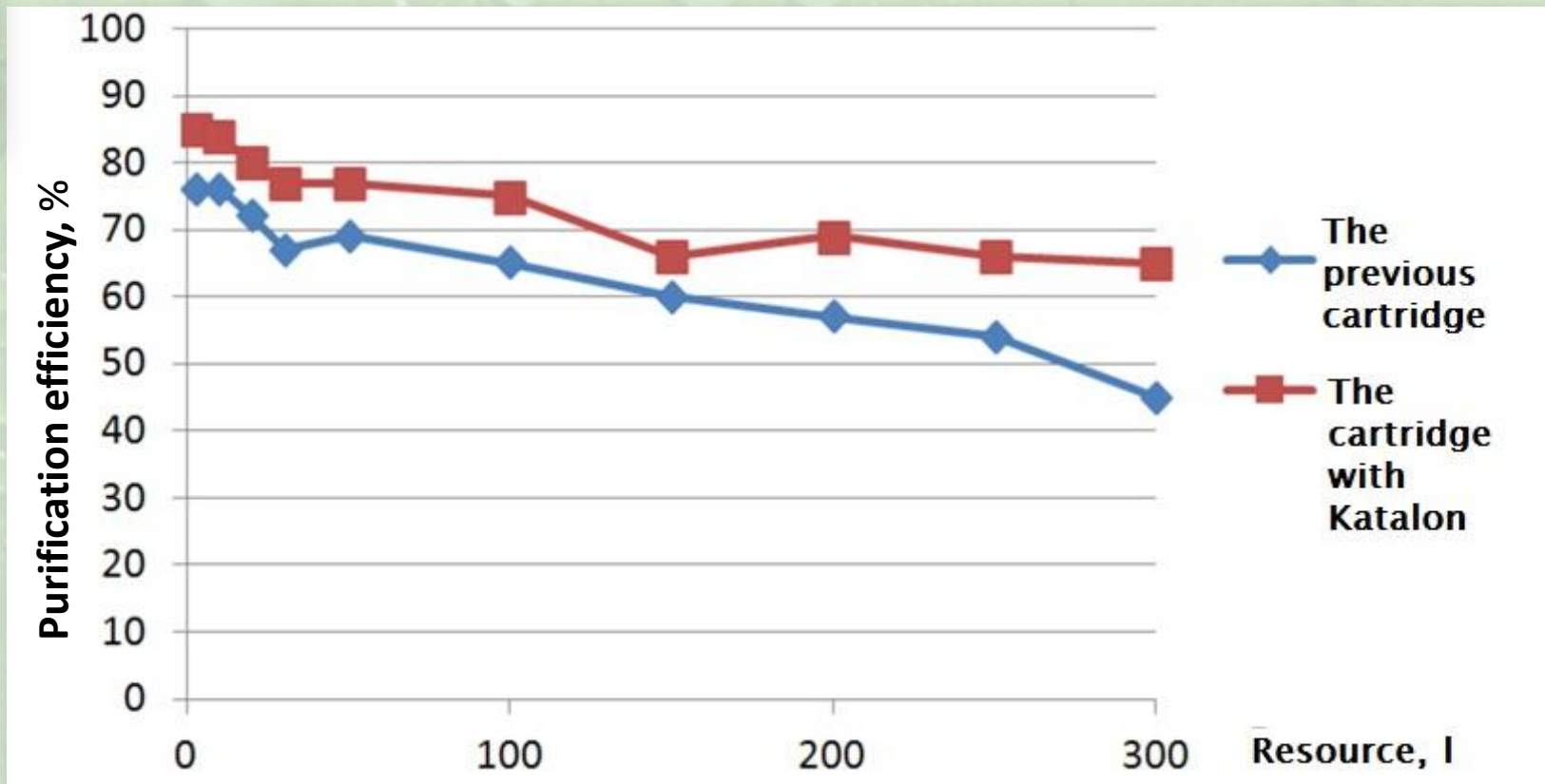
Experimental results of estimate of cartridge with Catalon barrier function using the model virus coli phage f2.

№	Cartridge type / Water passing-through time	Type of coli phage f2 investigation	Coli phage initial concentration, PFU	Coli phage concentration after cartridge, PFU	Purification efficiency, %
1	V1 Blanc / 4 min. 5 sec. V1 Blanc/ 4 min. 5 sec.	Agar-layer technique (direct addition) Membrane	- -	- -	Source water does not contain coli phages
2	V1 Hard water/ 4 min. V1 Hard water/ 4 min.	Agar-layer technique (direct addition) Membrane	1×10^3 B 100 cm^3 1×10^3 B 100 cm^3	0 0	100 100
3	V1 Soft water/ 4 min. 10 sec. V1 Soft water/ 4 min. 10 sec.	Agar-layer technique (direct addition) Membrane	1×10^3 B 100 cm^3 1×10^3 B 100 cm^3	0 0	100 100
4	V2 Soft water/ 4 min. 30 sec. V2 Soft water/ 4 min. 30 sec.	Agar-layer technique (direct addition) Membrane	1×10^3 B 100 cm^3 1×10^3 B 100 cm^3	0 0	100 100
5	V3 Soft water/ 4 min. V3 Soft water/ 4 min.	Agar-layer technique (direct addition) Membrane	1×10^3 B 100 cm^3 1×10^3 B 100 cm^3	8 B 100 cm^3 9 B 100 cm^3	99,2 99,1



Test results of the cartridge with CATALON

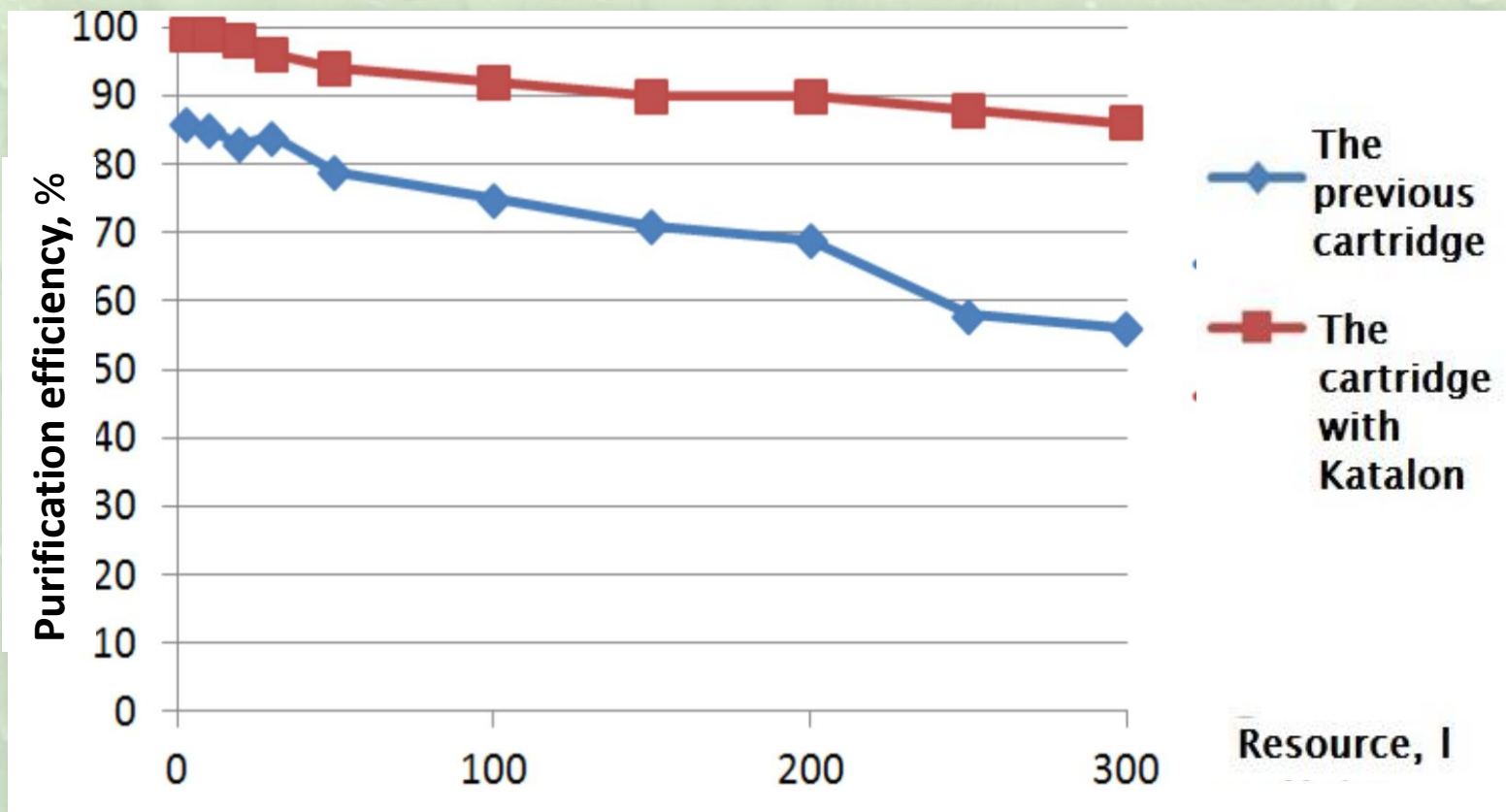
Purification water high in iron content (0,4 mg/l, MPC = 0,3 mg/l).





Test results of The cartridge with CATALON

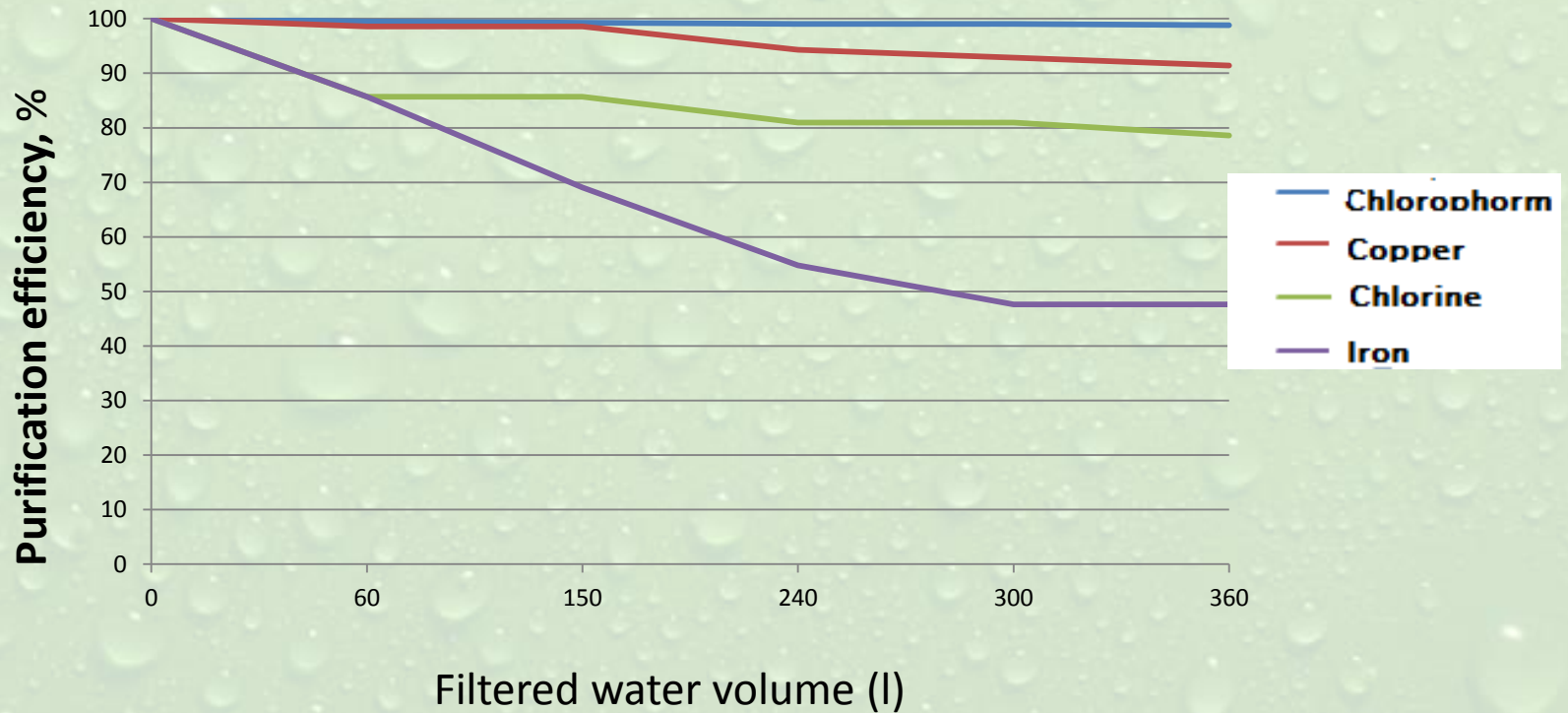
Lead level of water is 0,06 mg/l. The MPC is 0,03 mg/l.





Test results of The cartridge 501 with CATALON

Index	Content in water	MPC
Chloroform	0,2 mg/l	0,2 mg/l
Chlorine	0,51 mg/l	0,3-0,5 mg/l
Copper	1,128 mg/l	1,0 mg/l
Iron	0,42 mg/l	0,3 mg/l





New SKU with the **CATALON** material

Now available: all the 500 series cartridges with Catalon material.



Goods in which the above technologies were exploited.





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GEYSER[®]
water filters

For more information
please visit:

www.geizer.com